

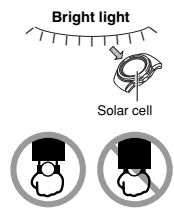
# Operation Guide 5038

CASIO®

## Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully.

### Keep the watch exposed to bright light

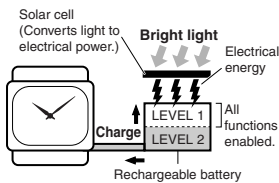


The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.

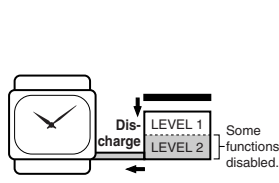
- When you are not wearing the watch on your wrist, position the face so it is pointed at a source of bright light.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked only partially from light, charging will be reduced significantly.

- The watch continues to operate, even when it is not exposed to light. Leaving the watch in the dark can cause the battery to run down, which will result in some watch functions to be disabled. If the battery goes dead, you will have to re-configure watch settings after recharging. To ensure normal watch operation, be sure to keep it exposed to light as much as possible.

### Battery charges in the light.



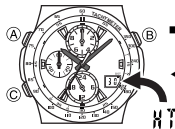
### Battery discharges in the dark.



## General Guide

- Press **(C)** to change from mode to mode.
- About 1.5 seconds after you enter the Dual Time Mode, Alarm Mode, or Home Position Adjustment Mode the hands will move the position that indicates the current setting of the mode. You cannot change to another mode while the hands are moving. To change to another mode, either press **(C)** before the hands start to move, or wait until the hands stop before pressing **(C)**.
- In the Timekeeping Mode (except when a setting screen is on the display), press **(B)** to illuminate the face of the watch.

### Timekeeping Mode



- The actual level at which some functions are disabled depends on the watch model.
- **Be sure to read "Power Supply" for important information you need to know when exposing the watch to bright light.**

### If the analog hands aren't moving...

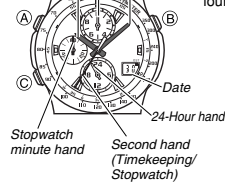
If the analog hands aren't moving, it means that the power saving mode has stopped them to save battery power.

- See "Power Saving" for more information.
- The hands also stop when the watch's battery runs down.

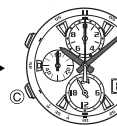
Note that CASIO COMPUTER CO., LTD. assumes no responsibility for any damage or loss suffered by you or any third party arising through the use of this product or its malfunction.

## About This Manual

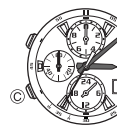
- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "Reference" section.



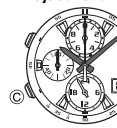
### Stopwatch Mode



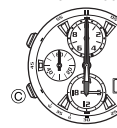
### Dual Time Mode



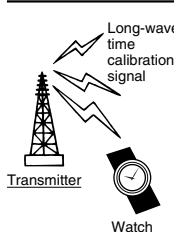
### Home Position Adjustment Mode



### Alarm Mode



## Radio-controlled Atomic Timekeeping



Your watch receives a time calibration signal and updates its time setting accordingly.

- This watch is designed to receive the time calibration signal transmitted from Shangqiu City, Henan Province, China (Call Sign: BPC, Frequency: 68.5 kHz).
- Your watch will be able to receive the signal whenever Beijing (UTC+8) is selected as its Home Time Zone, and the watch is within range of the transmitter. The initial factory Home Time Zone setting of the watch is Beijing (UTC+8), so you will not need to change the setting if you are in the same time zone (UTC+8) as Beijing.
- As of January 2008, China does not use Daylight Saving Time (DST). If China does go to the Daylight Saving Time system in the future, some functions of this watch may no longer operate correctly.

- See the information under "Signal Reception Troubleshooting" if you experience problems with time calibration signal reception.

### Chinese Time Calibration Signal

The Chinese time calibration signal (BPC) is maintained by the National Time Service Center (<http://www.ntsc.ac.cn/>) of the Chinese Academy of Sciences, and is transmitted from a transmitter (68.5 kHz) located in Shangqiu. The time data of the Chinese time calibration signal is maintained by the National Time Service Center.

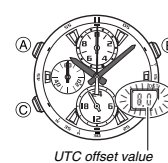
- Note that transmission of the calibration signal may be interrupted occasionally due to maintenance, lightning, etc.

### Current Time Setting

This watch adjusts its time setting automatically in accordance with a time calibration signal. You also can perform a manual procedure to set the time and date, when necessary.

- Whenever you need to travel outside of the time zone where Beijing is located (UTC+8), use the procedure under "To select your Home Time Zone" to change the watch's Home Time Zone setting as required.
- When using the watch outside the range of the time calibration signal transmitter, you have to adjust the current time setting manually as required. See "Timekeeping" for more information about manual time settings.
- Even if the time calibration signal is received correctly, there are some times when the analog hands may not indicate the correct time. If this happens, use the procedures under "Adjusting the Home Positions" to check the home positions of the hands, and make adjustments as required.

### To select your Home Time Zone



UTC offset value

1. In the Timekeeping Mode, hold down **(A)** until the UTC offset value starts to flash. This is the setting mode.
  - At this time the second hand will move at high speed to the 12 o'clock position and stop there.
  - The UTC offset value shows the difference in hours between the currently selected time zone and Coordinated Universal Time.
  - The DST indicator shows whether Daylight Saving Time (summer time) currently is being applied in the currently selected time zone.
2. Use **(B)** (+) to scroll through available time zones.
  - For information about time zones, see the "Time Zone Table".
  - If you want the watch to receive the Chinese time calibration signal, select **8.0** (UTC+8, Beijing) as your Home Time Zone.

3. Press **(A)** to exit the setting mode.

- The second hand will return at high speed to the applicable current time position and resume normal timekeeping.

### Time Calibration Signal Reception

There are two different methods you can use to receive the time calibration signal: auto receive and manual receive.

#### Auto Receive

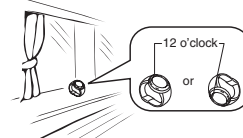
With auto receive, the watch receives the time calibration signal automatically up to five times a day. When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see "About Auto Receive".

#### Manual Receive

Manual receive lets you start a time calibration receive operation with the press of a button. For more information, see "To perform manual receive".

#### Important!

- When getting ready to receive the time calibration signal, position the watch as shown in the nearby illustration, with its 12 o'clock side facing towards a window. This watch is designed to receive a time calibration signal late at night. Because of this, you should place the watch near a window as shown in the illustration when you take it off at night. Make sure there are no metal objects nearby.



- Make sure the watch is facing the right way.

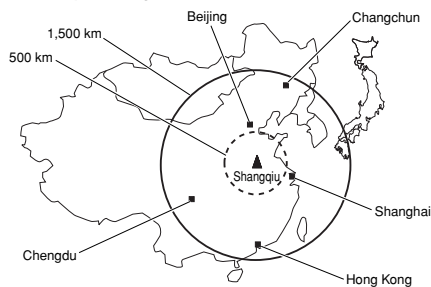
- Proper signal reception can be difficult or even impossible under the conditions listed below.



Inside or among buildings    Inside a vehicle    Near household appliances, office equipment, or a mobile phone    Near a construction site, airport, or other sources of electrical noise    Near high-tension power lines    Among or behind mountains

- Signal reception normally is better at night than during the day.
- Time calibration signal reception takes from two to seven minutes. Take care that you do not perform any button operations or move the watch during this time.

### Approximate Reception Range



- At distances further than about 500 kilometers from the Shanghai (China) transmitter, signal reception may not be possible during certain times of year or times of day. Radio interference may also cause problems with reception.
- Even when the watch is within the reception range of the transmitter, signal reception will be impossible if the signal is blocked by mountains or other geological formations between the watch and signal source.
- Signal reception is affected by weather, atmospheric conditions, and seasonal changes.

### About Auto Receive

The watch starts to receive the time calibration signal automatically when the time in the Timekeeping Mode reaches 1:00 a.m., 2:00 a.m., 3:00 a.m., 4:00 a.m., and 5:00 a.m. each day (calibration times). When any auto receive is successful, the remaining auto receive operations are not performed.

### Note

- Auto receive normally is performed when a calibration time is reached while the watch is in the Timekeeping Mode and Dual Time Mode. The receive operation is not performed if you are performing a button operation.
- Auto receipt of the calibration signal is designed to be performed early in the morning, while you sleep (provided that the Timekeeping Mode time is set correctly). Before going to bed for the night, remove the watch from your wrist, and put it in a location where it can receive the signal easily.
- The watch receives the calibration signal for two to seven minutes when the time in the Timekeeping Mode reaches a calibration time. Do not perform any button operation within seven minutes before or after any one of the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the current time in the Timekeeping Mode.

### To perform manual receive

1. Place the watch on a stable surface so its 12 o'clock side is facing towards a window.
2. In the Timekeeping Mode, hold down (A) for about two seconds until the watch beeps.
  - The second hand will move to **R (READY)** to indicate that the watch is setting up for time calibration reception.
  - The second hand will move to **W (WORK)** and stay there while actual reception is in progress.
  - If signal reception is unstable during reception, the second hand may move between **W (WORK)** and **R (READY)**.
  - The hour and minute hands continue to keep time normally.
  - Time calibration signal reception takes from two to seven minutes. Take care that you do not perform any button operations or move the watch during this time.
  - If reception is successful, the second hand will move to **Y (YES)**. Five seconds later, the hands will move to the correct time.

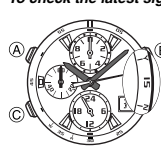
### Note

- To interrupt a receive operation and return to the Timekeeping Mode, press any button.
- If reception is not successful, the second hand will move to **N (NO)**. Five seconds later, the second hand will resume normal operation, without any adjustment of the hand setting.
- If the second hand is pointing to **Y (YES)** or **N (NO)**, you can return to the Timekeeping Mode by pressing (A).

### Viewing the Latest Signal Reception Results

You can use the procedure below to check whether or not the last signal receive operation was successful.

#### To check the latest signal reception results



- In the Timekeeping Mode, press (A).
- Whenever the watch successfully performs any signal receive operation from 1:00 a.m. onwards, the second hand will move to **Y (YES)**. If the watch has been unable to receive any signal successfully, the second hand will move to **N (NO)**.
  - The watch will return to the Timekeeping Mode after five seconds or when you press (A).
  - The current receive result is cleared when the first auto receive operation is performed on the following day. This means **Y (YES)** indicates successful signal reception since the start of the current day.
  - If you adjust the time or date setting manually, the second hand will move to **N (NO)**.

### Signal Reception Troubleshooting

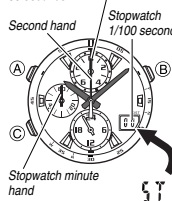
Check the following points whenever you experience problems with signal reception.

Problem	Probable Cause	What you should do
The second hand is pointing at <b>N (NO)</b> .	<ul style="list-style-type: none"> <li>• You changed the time setting manually.</li> <li>• You performed some button operation during the auto receive operation.</li> <li>• The watch is not in the Timekeeping or Dual Time Mode.</li> <li>• Signal reception results are reset at 1:00 a.m. each day.</li> <li>• Radio interference is often present during the day time, which can interfere with calibration signal reception.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform manual signal receive at night or wait until the next auto signal receive operation is performed.</li> <li>• Enter the Timekeeping or Dual Time Mode and try again.</li> <li>• Check to make sure the watch is in a location where it can receive the signal.</li> </ul>
The time setting is incorrect following signal reception.	<ul style="list-style-type: none"> <li>• The home position of the hands is off.</li> </ul>	<ul style="list-style-type: none"> <li>• Enter the Home Position Adjustment Mode and adjust the home position.</li> </ul>

- For further information, see "Important!" under "Time Calibration Signal Reception" and "Radio-controlled Atomic Timekeeping Precautions".

### Stopwatch

Stopwatch 1/20 second hand  
\* This hand rotates and indicates the second count during the first 60 seconds.

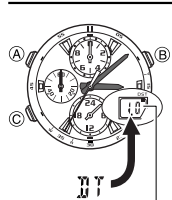


- The stopwatch lets you measure elapsed time.
- The display range of the stopwatch is 59 minutes, 59.99 seconds.
  - Entering the Stopwatch Mode causes the second hand, the stopwatch minute hand and stopwatch 1/20 second hand to move to the 12 o'clock position.
  - The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
  - The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
  - All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing (C).

#### To measure elapsed time

1. Press (B) to start the stopwatch.
2. Press (B) to stop the stopwatch.
  - You can resume the measurement operation by pressing (B) again.
  - The 1/20 second hand rotates during the first 60 seconds only, and then stops. When elapsed timing is stopped (by pressing (B)), this hand jumps to the 1/20 second indication (which is kept internally).
3. Check the elapsed time.
  - Press (A) to reset the stopwatch. Resetting the stopwatch causes the stopwatch 1/20-second hand and the second hand to move to 12 o'clock, and the digital display to reset to zero.

### Dual Time

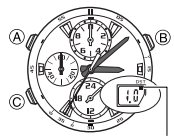


- The Dual Time Mode lets you view the current time in 29 time zones around the world.
- Time zones are indicated on the digital display by their UTC offset values.
  - For full information on time zones, see the "Time Zone Table".
  - The watch will perform a signal receive operation even if it is in the Dual Time Mode when a calibration time is reached. If this happens, the Dual Time Mode time settings will be adjusted in accordance with the current time in the Timekeeping Mode's Home Time Zone.
  - All of the operations in this section are performed in the Dual Time Mode, which you enter by pressing (C).

#### To view the time in another time zone

- While in the Dual Time Mode, press (B) to scroll eastward through time zones.
- When you release (B), the hands will move to the current time in that time zone after about one second.
  - If the current time shown for a time zone is wrong, check the Timekeeping Mode time setting and your Home Time Zone setting, and make the necessary changes.

### To toggle a time zone between Standard Time and Daylight Saving Time



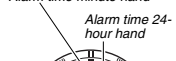
DST indicator

- In the Dual Time Mode, use (B) to display the time zone whose Standard Time/Daylight Saving Time setting you want to change.
- Hold down (A) to toggle between Daylight Saving Time (DST indicator displayed) and Standard Time (DST indicator not displayed).
- Turning on DST causes the UTC offset value to be increased by one.

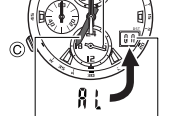
- The DST indicator appears on the display whenever you display a time zone for which Daylight Saving Time is turned on.
- The DST/Standard Time setting you configure affects only the currently displayed time zone. Other time zones are not affected.
- Note that you cannot use the Dual Time Mode to change the DST setting of the Home Time Zone you currently have selected in the Timekeeping Mode. See "To change the Daylight Saving Time (summer time) setting" for information about turning the Home Time Zone DST setting on and off.
- The UTC (UTC: Coordinated Universal Time) time zone cannot be switched between Standard Time and Daylight Saving Time.

### Alarm

Alarm time minute hand



Alarm time 24-hour hand



Alarm time hour hand On/Off status

When the alarm is turned on, the alarm sounds when the alarm time is reached.

- All of the operations in this section are performed in the Alarm Mode, which you enter by pressing (C).

#### To set an alarm time

- In the Alarm Mode, hold down (A) for two seconds to display the setting mode.
- Use (B) to change the alarm time.
  - Press (B) to move the hands clockwise in one-minute steps.
- After setting the alarm time, press (A) to exit the setting mode.
- Setting the alarm time causes the alarm to turn on automatically.

#### Alarm Operation

The alarm tone sounds at the preset time for 10 seconds, regardless of the mode the watch is in.

- Alarm operations are performed in accordance with the Timekeeping Mode time.
- Pressing any button stops the alarm tone operation.

#### To toggle an alarm on and off

- In the Alarm Mode, press (B) to toggle the alarm on (ON) and off (OFF).
- The watch will beep when you turn on the alarm.

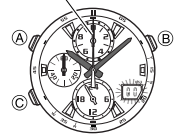
### Adjusting the Home Positions

If the time and date settings are wrong even after the time calibration signal is received normally, use the following procedure to adjust their home positions.

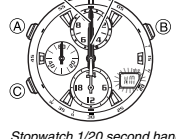
- You can use the procedure in this section to adjust the position of the second hand, the stopwatch minute hand and stopwatch 1/20 second hand whenever they do not align with the 12 o'clock position when you enter the Home Position Adjustment Mode.

#### To adjust the home positions

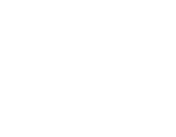
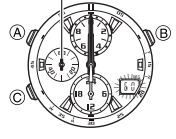
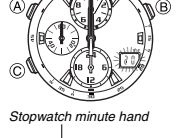
- In the Timekeeping Mode, press (C) four times to enter the Home Position Adjustment Mode.
  - Second hand
- Hold down (A) until 0 0 starts to flash, which indicates the analog setting screen.
  - The second hand is at the proper home position if it moves to 12 o'clock. If it doesn't, press (B) to move it to 12 o'clock.
- After confirming that the second hand is at the proper home position, press (C).
  - This will switch to hour hand and minute hand home position adjustment (Hm flashes).
  - The hour hand and minute hand are at their proper home positions if they both move to 12 o'clock, and if the 24-hour hand is pointing at hour 24. If the hands are not positioned correctly, use (B) to move them to their proper home positions.
- After confirming that the hour hand and minute hand are both at their proper home positions, press (C).
  - This will switch to stopwatch 1/20 second hand home position adjustment (20 flashes).
  - The stopwatch 1/20 second hand is at the proper home position if it moves to 0 position. If it doesn't, use (B) to move it to 0 position.
- After confirming that the stopwatch 1/20 second hand is at the proper home position, press (C).
  - This will switch to stopwatch minute hand home position adjustment (60 flashes).
  - The stopwatch minute hand is at the proper home position if it moves to 60. If it doesn't, use (B) to move it to 60.
- Press (A) to exit the setting screen.
  - After you complete the home position adjustment procedure, place the watch in a location that allows good time calibration signal reception, and then perform a manual receive operation. See "To perform manual receive" for more information.



Minute hand Hour hand



Stopwatch 1/20 second hand



### Timekeeping

Hour hand Minute hand



Second hand 24-Hour hand

Use the Timekeeping Mode to set and view the current time and date, and to switch between Standard Time and Daylight Saving Time (summer time).

- Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.
- All of the operations in this section are performed in the Timekeeping Mode, which you enter by pressing (C).

#### Setting the Time and Date Manually

Make sure you select your Home Time Zone before you change the current time and date settings. Dual Time Mode times are all displayed in accordance with the Timekeeping Mode settings. Because of this, Dual Time Mode times will not be correct if you do not select the proper Home Time Zone before setting the time and date in the Timekeeping Mode.

- When setting the time and date, you also can configure settings for your Home Time Zone (the time zone where you normally use the watch) and summer time (Daylight Saving time or DST).

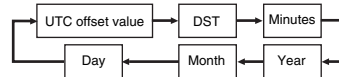
#### To set the time and date manually

- In the Timekeeping Mode, hold down (A) until the UTC offset value starts to flash, which indicates the setting screen.
  - The second hand will move at high speed to the 12 o'clock position, where it will stop.



UTC offset value  
0 0 : +8.0 0 0 : -4.0  
Minus sign

- The UTC offset value shows the difference in hours between the currently selected time zone and Coordinated Universal Time.
  - The DST indicator indicates that Daylight Saving Time (summer time) is turned on for the currently selected time zone.
- Use (B) to select the time zone you want to use as your Home Time Zone.
    - For full details about UTC offset values, see the "Time Zone Table".
  - Press (C) to move the flashing in the sequence shown below to select other settings.



- Changing the minutes value on the digital display will cause the minute and hour hands to move accordingly.
  - To change the hour hand setting, you need to keep moving the minute hand until the hour hand is at the position you want.
- When the setting you want to change is flashing, use (B) to change it as described below.

Screen	To do this:	Do this:
0 0	Change the time zone	Press (B).
0 0 <sup>DST</sup>	Toggle between Daylight Saving Time (0 0 <sup>DST</sup> ) and Standard Time (0 0)	Press (B).
0 0	Change the minutes (time)	Press (B)(+).
0 0	Change the year	
0	Change the month	
0 0	Change the day	
0 0		

- Press (A) to exit the setting screen.
- When you exit the setting screen, the analog hands are adjusted automatically to match the digital time. The second hand starts timing from 0.

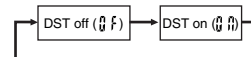
#### Daylight Saving Time (DST)

Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

- If you experience problems receiving the time calibration signal in your area, it probably is best to switch between Standard Time and Daylight Saving Time (summer time) manually.

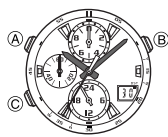
#### To change the Daylight Saving Time (summer time) setting

- In the Timekeeping Mode, hold down (A) until the UTC offset value starts to flash, which indicates the setting screen.
- Press (C) to display the DST setting screen.
- Press (B) to cycle through the DST settings in the sequence shown below.



- Press (A) to exit the setting screen.
- The DST indicator appears on the display to indicate that Daylight Saving Time is turned on.
- Turning on DST causes the UTC offset value to be increased by one.

## illumination



An LED (light-emitting diode) illuminates the face of the watch for easy reading in the dark. The watch's auto light switch illuminates the face automatically when you angle the watch towards your face.

- The auto light switch must be turned on for it to operate.
- See "Illumination Precautions" for other important information.

### To illuminate the face of the watch

In the Timekeeping Mode (except when a setting screen is on the display), press (B) to illuminate the face of the watch for about one second.

- The above operation turns on illumination regardless of the current auto light switch setting.
- The auto light switch operates in all modes (except while a setting screen is displayed.)

### About the Auto Light Switch

Turning on the auto light switch causes the face to illuminate, whenever you position your wrist as described below in any mode. Note that this watch features an "Full Auto LED Light," so the auto light switch operates only when available light is below a certain level. It does not illuminate the face under bright light.

Moving the watch to a position that is parallel to the ground and then tilting it towards you at more than 40 degrees causes illumination to turn on.

- Wear the watch on the outside of your wrist.



### Warning!

- Always make sure you are in a safe place whenever you are reading the face of watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not startle or distract others around you.
- When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle, or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.

### To turn the auto light switch on and off

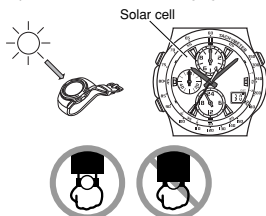
- In the Timekeeping Mode (except when a setting screen is on the display), hold down (B) for about three seconds to toggle the auto light switch on and off.
- Turning on the auto light switch will cause the watch to beep. The "ON" (ON) indicator will appear and the light will turn on for 1.5 seconds.
- Turning off the auto light switch will cause the watch to beep. The "OFF" (OF) indicator will appear for 1.5 seconds. The light will not turn on.

## Power Supply

This watch is equipped with a solar cell and a special rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

**Example:** Orient the watch so its face is pointing at a light source.

- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked from light only partially, charging will be reduced significantly.

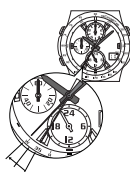


### Important!

- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to light can cause rechargeable battery power to run down. Make sure that the watch is exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar cell, so regular battery replacement is not required. However, after very long use, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the special rechargeable battery to charge fully, contact your dealer or CASIO distributor about having it replaced.
- Never try to remove or replace the watch's special battery yourself. Use of the wrong type of battery can damage the watch.
- All data stored in memory is deleted, and the current time and all other settings return to their initial factory defaults whenever battery power drops to Level 3 and when you have the battery replaced.
- Keep the watch in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

### Battery Power Levels

Battery power level is indicated by hand movement and a display indicator.



Level	Hand Movement/Display Indicator	Function Status
1	Normal	All functions enabled.
2	• Second hand jumps every two seconds. • LO displayed.	All functions disable, except for analog timekeeping and stopwatch.
3	• All hands stopped. • Display is blank.	All functions disabled.

Jumps 2 seconds

- Battery level is very low when the second hand jumps every two seconds and the display shows LO. Expose the watch to light and charge the battery as soon as possible.

- When battery power is at Level 2, time calibration signal reception is disabled.
- Alarm operation can cause hand movement to stop due to the sudden temporary drop in battery power. This does not indicate malfunction, and normal operation will resume when the watch is exposed to light. Though hand movement stops, timekeeping continues internally, and the hands will be adjusted to the correct setting when normal operation returns.

### Charging Precautions

Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery.

### Warning!

Leaving the watch in bright light to charge its rechargeable battery can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

### Charging Guide

After a full charge, timekeeping remains enabled for up to about eight months.

- The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor sunlight (50,000 lux)	8 minutes
Sunlight through a window (10,000 lux)	30 minutes
Daylight through a window on a cloudy day (5,000 lux)	48 minutes
Indoor fluorescent lighting (500 lux)	8 hours

- Since these are the specs, we can include all the technical details.
  - Watch not exposed to light
  - Internal timekeeping
  - Display on 18 hours per day, sleep state 6 hours per day
  - 1 illumination operation (1.5 seconds) per day
  - 10 seconds of alarm operation per day
  - 6 minutes of signal reception per day
- Stable operation is promoted by frequent charging.

### Recovery Times

The table below shows the amount of exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time		
	Level 3	Level 2	Level 1
Outdoor sunlight (50,000 lux)	2 hours	27 hours	---
Sunlight through a window (10,000 lux)	5 hours	133 hours	---
Daylight through a window on a cloudy day (5,000 lux)	9 hours	268 hours	---
Indoor fluorescent lighting (500 lux)	109 hours	---	---

- The above exposure time values are all for reference only. Actual required exposure times depend on lighting conditions.

## Reference

This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

### Auto Return Features

- If you leave the watch in the Alarm or Home Position Adjustment Mode for two or three minutes without performing any operation, it returns to the Timekeeping Mode automatically.
- If you do not perform any operation for about two or three minutes while a setting mode is selected, the watch will exit the setting mode automatically.

### Scrolling

- The (B) button is used to change the hand and digital display setting in various setting modes. In most cases, holding down this button will change the applicable setting at high speed.
- High-speed movement of hands will continue until you press any button, or until the moving hand(s) finishes one complete cycle.
  - One complete cycle for the hands is one revolution (360 degrees) or 24 hours.

### Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time being set.
- The time calibration signal bounces off the ionosphere. Because of this, such factors as changes in the reflectivity of the ionosphere, as well as movement of the ionosphere to higher altitudes due to seasonal atmospheric changes or the time of day may change the reception range of the signal and make reception temporarily impossible.
- Even if the time calibration signal is received properly, certain conditions can cause the time setting to be off by up to one second.
- The current time setting in accordance with the time calibration signal takes priority over any time settings you make manually.
- The watch is designed to update the date automatically for the period January 1, 2000 to December 31, 2099. Setting of the date by the time calibration signal cannot be performed starting from January 1, 2100.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Though this watch is designed to receive both time data (hour, minutes, seconds) and date data (year, month, day), certain signal conditions can limit reception to time data only.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time within  $\pm 20$  seconds a month at normal temperature.

### Timekeeping

- The year can be set in the range of 2000 to 2099.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's battery replaced or when battery power drops to Level 3.
- The date will change automatically when the current time reaches midnight. The date change at the end of the month may take more time than normal.
- The current time for all time zones in the Timekeeping Mode and Dual Time Mode is calculated in accordance with the Coordinated Universal Time (UTC) offset of each zone, based on your Home Time Zone time setting.
- UTC is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep time accurately to within microseconds. Leap seconds are added or subtracted as necessary to keep UTC in sync with the Earth's rotation. The reference point for UTC is Greenwich, England.

### Power Saving

Power Saving enters a sleep state automatically whenever the watch is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by Power Saving.

- There actually are two sleep state levels: "second hand sleep" and "function sleep".

Elapsed Time in Dark	Operation
60 to 70 minutes (second hand sleep)	Second hand only is stopped, all other functions are enabled.
6 or 7 days (function sleep)	<ul style="list-style-type: none"> <li>• All functions, including analog timekeeping, disabled</li> <li>• Internal timekeeping maintained</li> </ul>

- Wearing the watch inside the sleeve of clothing can cause it to enter the sleep state.
- The watch will not enter the sleep state between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when 6:00 AM arrives, however, it will remain in the sleep state.

### To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area.
- Press any button.

### Illumination Precautions

- The illumination provided by the light may be hard to see when viewed under direct sunlight.
- Illumination automatically turns off whenever an alarm sounds.
- Frequent use of illumination shortens the battery operating time.

### Auto light switch precautions

- Wearing the watch on the inside of your wrist, movement of your arm, or vibration of your arm can cause frequent activation of the auto light switch and illuminate the face of the watch. To avoid running down the battery, turn off the auto light switch whenever engaging in activities that might cause frequent illumination of the face.
- Note that wearing the watch under your sleeve while the auto light switch is turned on can cause frequent illumination of the face and can run down the battery.

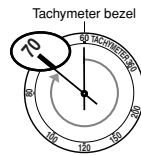
More than 15 degrees too high



- Illumination may not turn on if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- Illumination turns off in about one second, even if you keep the watch pointed towards your face.

- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If illumination does not turn on, try moving the watch back to the starting position (parallel with the ground) and then tilt it back towards your face again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions, illumination may not turn on until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the auto light switch.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

### Tachymeter



If your watch has a tachymeter bezel, you can perform the steps below to calculate average speed after using the Stopwatch Mode to measure the amount of time that it takes to travel one kilometer (or one mile).

- **Never try to perform stopwatch operations while you are driving an automobile, riding a bicycle, or operating any type of vehicle. Doing so is very dangerous and can result in accident.**

- ① In the Stopwatch Mode, start an elapsed time operation at any point you like.
- ② Stop the elapsed time operation after you travel one kilometer or one mile.
- ③ Your average speed will be the value that the second hand is pointing to on the tachymeter bezel.

- The illustration shows an example where it took 50 seconds to travel one kilometer by car. The second hand is pointing at 70, which indicates that the average speed is 70 kilometers per hour.
- See "Stopwatch" for details about using the stopwatch.
- The tachymeter can be used only when you are traveling by car or some other means that can cover one kilometer or one mile within 60 seconds.

### Time Zone Table

UTC Offset Value		Major Cities in Time Zone
Standard Time	DST/Summer Time	
-11.0	DST -10.0	Pago Pago
-10.0	DST -9.0	Honolulu, Papeete
-9.0	DST -8.0	Anchorage, Nome
-8.0	DST -7.0	Los Angeles, San Francisco, Las Vegas, Vancouver, Seattle/Tacoma, Dawson City, Tijuana
-7.0	DST -6.0	Denver, El Paso, Edmonton, Culiacan
-6.0	DST -5.0	Chicago, Houston, Dallas/Fort Worth, New Orleans, Mexico City, Winnipeg
-5.0	DST -4.0	New York, Montreal, Detroit, Miami, Boston, Panama City, Havana, Lima, Bogota
-4.0	DST -3.0	La Paz, Santiago, Port of Spain
-3.0	DST -2.0	Rio De Janeiro, Sao Paulo, Buenos Aires, Brasilia, Montevideo
-2.0	DST -1.0	
-1.0	DST +0.0	Praia
UT 0.0	UT 0.0	(UTC)
+0.0	DST +1.0	London, Dublin, Lisbon, Casablanca, Dakar, Abidjan
+1.0	DST +2.0	Paris, Milan, Rome, Madrid, Amsterdam, Algiers, Hamburg, Frankfurt, Vienna, Stockholm, Berlin
+2.0	DST +3.0	Cairo, Jerusalem, Athens, Helsinki, Istanbul, Beirut, Damascus, Cape Town
+3.0	DST +4.0	Jeddah, Kuwait, Riyadh, Aden, Addis Ababa, Nairobi, Moscow
+3.5	DST +4.5	Tehran, Shiraz
+4.0	DST +5.0	Dubai, Abu Dhabi, Muscat
+4.5	DST +5.5	Kabul
+5.0	DST +6.0	Karachi, Male
+5.5	DST +6.5	Delhi, Mumbai, Kolkata, Colombo
+6.0	DST +7.0	Dhaka
+6.5	DST +7.5	Yangon
+7.0	DST +8.0	Bangkok, Jakarta, Phnom Penh, Hanoi, Vientiane
+8.0	DST +9.0	Hong Kong, Singapore, Kuala Lumpur, Beijing, Taipei, Manila, Perth, Ulaanbaatar
+9.0	DST +10.0	Tokyo, Seoul, Pyongyang
+9.5	DST +10.5	Adelaide, Darwin
+10.0	DST +11.0	Sydney, Melbourne, Guam, Rabaul
+11.0	DST +12.0	Noumea, Port Vila
+12.0	DST +13.0	Wellington, Christchurch, Nadi, Nauru Island

- Based on data as of June 2007.
- The rules governing global times (GMT differential and UTC offset) and summer time are determined by each individual country.